

Original article

Prevalence of hepatitis B surface antigenaemia among newly employed staff of University of Calabar Teaching Hospital

Gyuse AN¹, Udonwa NE¹, Okokon IB¹, Ibangba I², Ogbonna UK¹

¹Department of Family Medicine, ²Department of Haematology, University of Calabar Teaching Hospital, Calabar, Cross River State, Nigeria

Abstract

Objective: This study aimed to determine the prevalence of Hepatitis B antigen among newly employed staff in a Tertiary Hospital in South-South Nigeria. **Method:** The medical records of a total of 238 newly employed members of staff of the University of Calabar Teaching Hospital between 2000 and 2006 were reviewed. Their socio-demographic data and Hepatitis B Surface Antigen (HBSAg) results were analyzed. **Results:** The overall prevalence of Hepatitis B Surface Antigenaemia was found to be 5.04%. The prevalence was 7.30% in males and statistically significant compared to 3.50% in females. **Conclusion:** There is a reasonably high prevalence of HBSAg among adults prior to employment into Health Care Institutions. This poses a danger to clients seeking care in these health care facilities and other health care workers. Health Institutions must have clear policies on engagement of new staff relating to such communicable diseases based on existing Nigerian labour laws including the Workman Compensation Act. They must also implement policies on universal precautions to safeguard the health workers and clients in their care. Public enlightenment on the National Program on Immunization (NPI) must be intensified as a strategy to reduce the prevalence of HBSAg and its attendant consequences.

Keywords: Hepatitis B; Antigen; Newly employed

INTRODUCTION

Infection with Hepatitis B virus (HBV) and its associated sequelae is a widespread problem of major public health importance worldwide. Epidemiological survey shows that about 5% of the world population are asymptomatic carriers^[1]. Reports of serum carrier rates of hepatitis B surface antigen (HBsAg) show that the infection is very prevalent in Nigeria^[2,3]. A recent study among blood donors in Gombe showed a prevalence of 10.4%^[4], while a prevalence of 5.4% was found in Benin City³ and 23.4%

in Ilorin^[5]. A community based study in Borno, north eastern Nigeria found a prevalence of 44.6% in children^[4], while a hospital based cross sectional study in Jos found a prevalence of 15.5%^[6].

Hepatitis B virus infection is a major occupational disease among health workers. The health workers in Nigeria are particularly at increased risk of contacting the disease because Nigeria is a holo-endemic area with Hepatitis B virus (HBV) carrier rate range of 15 - 37% across the country^[7].

Studies in Nigeria have shown that HBV is a major aetiological factor for liver cirrhosis and hepatocellular carcinoma^[8,9] and 50% of chronic carriers may be expected to die from liver disease (liver cirrhosis or hepatocellular carcinoma)^[1].

Pre-employment screening of newly recruited hospital staff is an important health promotion measure. It is also important because it serves to inform the incoming staff and the hospital of his/her health sta-

Correspondence to: Dr. Abraham N. Gyuse, Department of Family Medicine, University of Calabar Teaching Hospital, GPO 1821 Calabar 540001 Cross River State, Nigeria.
Tel: +2348035977106, +2348080240468
E-mail: ngugyuse@yahoo.com



tus. This can be used for Insurance purposes, workman compensation claims and other medicolegal claims^[10-12] especially when the staff came in with HBsAg negative status. It can also serve, in hospital settings, to protect the patients who are going to be served by these staff, especially when the screening turns out to be positive.

There has been no known published work on newly recruited hospital staff Hepatitis B surface antigenaemia in Nigeria. The purpose of this study was therefore to determine the sero-prevalence of HBsAg in newly recruited staff of the University of Calabar Teaching Hospital, this will add to the body of knowledge of HBsAg and also to advice the hospital on the burden.

MATERIALS AND METHODS

The medical records of the University of Calabar Teaching Hospital Staff Clinic was reviewed and the medical records of all staff recruited between 2000 and 2006 were retrieved.

Socio-demographic data such as age, sex, marital status and job category were recorded. The results of the serum HBsAg were also extracted. The HBsAg

had been done using the Rapid Test Strips (Abbott Laboratories, an immunochromatographic 1-step test strip).

The data were analyzed using Epi Info 2002 (CDC, Atlanta, USA) Statistical Software, and Chi-square was used for statistical analysis.

RESULTS

A total of 238 newly recruited staff comprising of 96 males and 142 females were screened. The overall carrier rate of 5.04% was found. This comprised of 7 males (7.30%) and 5 females (3.50%). There was significant difference in antigenaemia between the males and females ($\chi^2 = 208.83$, $P < 0.05$). This is shown in Table 1.

Table 2 shows the age distribution of those positive for HBsAg. Four subjects were aged between 21 - 30 years (4/136 or 2.90%), while eight were aged between 31 - 40 years (8/84 or 9.50%). None was positive among those less than 20 years and above 40 years of age. There was no significant difference in the antigenaemia among the various age groups ($\chi^2 = 0.03$, $P > 0.05$)

Table 1 Sex Distribution of Subjects screened for HBsAg in UCTH, Calabar.

Sex	Number Screened (N = 238)	HBsAg Positive (%)
Male	96	7 (7.30)
Female	142	5 (3.50)
Total	238	12 (5.04)

($\chi^2 = 208.83$; $P < 0.05$)

Table 2 Age Distribution of Subjects screened for HBsAg in UCTH, Calabar

Age (years)	Number Screened	HBsAg Positive	% Positive
1 - 10	0	0	0.00
11 - 20	10	0	0.00
21 - 30	136	4	2.90
31 - 40	84	8	9.50
41 - 50	8	0	0.00
Total	238	12	5.04

($\chi^2 = 0.03$; $P > 0.05$)

DISCUSSION

The sero-prevalence of 5.04% compares with 5.4%^[3] found in Benin among healthy blood donors, and 4.3%^[13] among hospital workers in Ido-Ekiti. This prevalence may seem low figuratively, but is reasonably high when estimating the risk this figure poses to the patients that these staff will attend to o-

ver time. The highest prevalence (9.5%) was seen in 31 - 40 year age bracket. This is understandable as this is the age within which many professionals in the medical sector complete their training and are ready for employment.

The higher seroprevalence among the male staff than the females follows the general trend recorded by several studies^[2,3,8,10]. This may be due largely

to higher risk exposure among the males compared to the females.

Based on the Workmen's Compensation Act, a worker is entitled to compensation if he/she suffers any temporary or permanent disability during the course of his/her duty^[11]. It is therefore necessary that such occupational diseases must be screened for at entry into the workplace as baseline, and the staff informed and counseled along with appropriate therapy where needed. This will forestall a later dispute in the settlement of claims due to the staff that suffer disability or contact such occupational disease.

It has been documented that Medical workers are at increased risk of contacting Hepatitis B Virus infection. A cross-sectional study in Ido-Ekiti Federal Medical Centre, Nigeria, found a prevalence of 4.3% among hospital staff, with most of those positive nurses and ward orderlies^[13]. In Port Harcourt, Nigeria, 14.5%^[14] sero-prevalence was found among Chemical pathology laboratory staff, confirming that health workers are at risk of being infected with HBV. The foregoing makes it mandatory for hospitals to pay such staff that became infected in the course of duty some compensation based on the Workmen's Compensation Act^[11].

It appears that most Health institutions in Nigeria including the study centre have no clear policy on how to handle these results therefore leaving it to the discretion of the screening physician. It is necessary that health care workers are adequately educated on the risk their being seropositive poses to the patient and how this risk can be minimized. The sero-negative staff must be adequately educated on the risk they are exposed to and to prevent or minimize this based on the principle of universal precaution including vaccination against HBV as recommended by the Nigerian National Health Policy and National Immunization Policy and Practice Standard^[15-17]. Health institutions must also clearly implement the post-exposure policies as recommended by the CDC and Nigeria National Immunization Policy and Practice standard^[15,16]. The vaccinations should be given free to staff that have accidental exposure during the course of work. They must also be educated on the Workman Compensation Act.

As a public health measure governments and health institutions must intensify public campaign for immunizations of the populace based on the Nigerian National Policy on Immunization (NPI) in which

Hepatitis B Vaccination is provided.

REFERENCES

- 1 **Omer EE.** Clinical Significance of markers of Hepatitis B. *Medicine Digest.* 1995;2;10 - 15.
- 2 **Mustapha SK,** Jibrin YB. The prevalence of Hepatitis B Surface antigenaemia in patients with Human Immunodeficiency Virus (HIV) infection in Gombe, Nigeria. *Annals of African Medicine.* 2004;3(1):10-12.
- 3 **Umolu IP,** Okoror LE, Orhue P. Human immunodeficiency virus (HIV) seropositivity and the hepatitis B surface antigenemia (HBsAg) among blood donors in Benin city, Edo state, Nigeria. *African Health Sciences.* 2005;5(1):55-58.
- 4 **Bukbuk DN,** Bassi AP, Mangoro ZM. Seroprevalence of hepatitis B surface antigen among primary school pupils in rural Hawal valley, Borno state, Nigeria. *Journal of Community Medicine and Primary Health Care.* 2005;17(1):20-23.
- 5 **Bada AS,** Olantunji PO, Adewuyi JO, Iseniyi JO, Onile BA. Hepatitis B surface antigenaemia in Ilorin, Kwara state, Nigeria. *Cent Afr J Med.* 1996;42(5):139-141.
- 6 **Okolo SN,** Bello CSS, Idoko L, Okanjuobi SO. Carriage rate of Hepatitis-B Surface Antigen Among Patients attending the Jos University Teaching Hospital, Jos, Plateau State of Nigeria. *The Nigerian Postgraduate Medical Journal.* 1996;3(1):10-12.
- 7 **Bojuwoye BJ.** The burden of viral hepatitis in Africa. *West Afr J Med.* 1997;16:198 - 202
- 8 **Ojo OS,** Ndububa DA, Lawal AA, Rotimi O, Adeniran EA, Uchegbu LO. The prevalence and aetiological role of Hepatitis B Virus in chronic liver disease among Nigerians. *Nigerian Medical Journal.* 1998;34:1-3.
- 9 **Mustapha SK,** Kudi AA, Asaka LE. Prevalence of Hepatitis B surface antigen (HBsAg) and HIV among blood donors in Gombe. *Journal of Life and Environmental Sciences.* 2002;4:231-235.
- 10 **Jinadu MK.** Occupational Health and Safety in a Newly Industrializing Country. *The Journal of the Royal Society for the Promotion of Health.* 1987;107(1):8-10.
- 11 Workmen's Compensation Act, 1987.
- 12 Kenna & Associates. Insurance Policies for Employees in Nigeria. SME Toolkit. www.smetoolkit.org
- 13 **Ajayi AO,** Komolafe AO, Ajumobi K. seroprevalence of Hepatitis B Surface Antigenaemia among Health Care Workers in a Nigerian Tertiary Health Institution. *Nigerian Journal of Clinical Practice.* 2007;10(4):287-289.
- 14 **Ejele OA,** Ojule AC. Hepatitis B Antigenaemia (HBsAg); Risk of Occupational Exposure in A Chemical Pathology Laboratory in Nigeria. *Nigerian Journal of Clinical Practice.* 2003;6(2):99-101.
- 15 **Ibekwe RC,** Ibeziako N. Hepatitis B Vaccination Status among health workers in Enugu, Nigeria. *Nigerian Journal of Clinical Practice.* 2006;9(1):7-10.
- 16 Federal Ministry of Health. Nigerian National Immunization Policy and Standard Practice. 1995;2:2-20
- 17 Revised National Health Policy. Federal Ministry of Health, Abuja, Nigeria. 2004.